

## SEQUENCE LISTING

&lt;110&gt; The President and Fellows of Harvard College

&lt;120&gt; REGULATION OF BIOFILM FORMATION

&lt;130&gt; 00246/505WO3

&lt;150&gt; 60/102,870

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&lt;160&gt; 49

&lt;170&gt; FastSEQ for Windows Version 3.0

&lt;210&gt; 1

&lt;211&gt; 1090

&lt;212&gt; DNA

&lt;213&gt; Psuedomonas fluorescens

&lt;220&gt;

&lt;221&gt; variation

&lt;222&gt; (1)...(1090)

&lt;223&gt; n is a, t, c, or g.

&lt;400&gt; 1

gagcgcgagna	gaggaagngn	gggagganga	ggaaggagga	gagnggaaga	aggggggaag	60
gggagggggg	aagggagagn	ggggagnngg	gggnatnngg	gannngggng	gggnngngnn	120
ntgnntatna	tnangctccg	gccggacgaa	gaaattcccg	atgcattgct	cgagcgcgt	180
ggcctgtctc	gggacaaggt	caaccacgta	ttcagcaaag	tgctcnaggc	ggaantgctg	240
ctgcgcgaac	tggcctcgca	nttcagccac	ggctgaatag	gctcgcccgg	tcatttgc	300
tttcccacgc	tctgcgtggg	aatgcatccc	gtgacgctct	gcgtcacatc	tcagaagcgg	360
aacgcggagc	gtccctggcg	acntttccnc	ncagggagcg	tggggaaaccn	ancaaacntg	420
gtccctctga	ttntaaagtt	cttccttaaa	ancttctnc	gggcttccag	gttattttgg	480
tccanccccc	ttgggaaccc	anatccccc	ggcggcccgg	ggttgc	tttgatcctg	540
gggattccga	ctttgttcct	tgnaaatccc	cccttccatt	gaaaccnccc	angtttngcc	600
ttttgttcc	ctttgggccc	ntnccaatcc	gntngggcaa	aaacgcccatt	tangggcng	660
gggcggtccc	cccccccncc	nntgtactn	aatnncanaa	cgccnnttgg	gccanaaaann	720
tgcnctngng	nnnnnnncnnc	gncntcttn	ctncccntcc	nnnctnnt	cctcngtgta	780
tntccaaantc	ntnccnncc	ccntccngcc	tcccactnc	ctnngccctc	cnnncnncncc	840
cgttnccatn	ctccnccntn	ntccgcttnt	ccccnnttan	cgtngccgtt	ncggccccgn	900
nncnnngtca	tcnntgnccg	tcttcncccc	ncctgtccn	cccantgcn	ngnnnctccg	960
aggtcgcngg	tctcncncc	nccnngttcg	tgcnncngcn	cnngatccc	ttcncnccng	1020
ncctnntatgc	tgaccagtnn	gnngngtng	nnncctcccg	tcngnacntg	tntngngggg	1080
ggcccncccc						1090

&lt;210&gt; 2

&lt;211&gt; 277

&lt;212&gt; DNA

&lt;213&gt; Psuedomonas fluorescens

<220>  
 <221> variation  
 <222> (1)...(277)  
 <223> n is a, t, c, or g.

<400> 2  
 ggnggggnng ggncttgtgt ataaaatntca ggctctgaca tccaggccgc aggcggcctg 60  
 gtcccnatgg ttatcgacca ntccgcccgc ggcnaangtg cctatnanat ctactcncgt 120  
 ctgctcaang aacgcgtcat ctttctggtg ggcggtaa aagactacat ggcnacac 180  
 atctgtgcgc aactnttggc ccttgaancn naaaaacccgn acnaggatat ccatcttat 240  
 atcaacnccc cnggtactag ttcaaccgt gaaaaaa 277

<210> 3  
 <211> 819  
 <212> DNA  
 <213> Psuedomonas fluorescens

<220>  
 <221> variation  
 <222> (1)...(819)  
 <223> n is a, t, c, or g.

<400> 3  
 gctngtgtct acgcntcagc aanaatgccg cccgcacna caacncttaa tcngctgaaa 60  
 ntccattgga ttagtgcgttcc cccgtccatc cnancctgga agccagatt nctgcccac 120  
 atnanggtnc gggtgccaaac aatctcaccg naacctgnnc ctgtggtcac aancgaggtt 180  
 caggtcaccac cgcgcgtccc ggcacccgtt gcccncctgg tcaggccggg ccagggnncg 240  
 gtngcccccag angtcnatcc tcccttgac cctnaanncg acccgcncna tgcntggcna 300  
 ccnttgcntt tgcaatggc ccngggngga catnttncgc cccgctatcc agggcncnac 360  
 ccaanantac ngccccggcg tcccttotann ntntactatt cnacgcgtgg gcananntgc 420  
 ccctngtngg cttncccttc tcttcccgcn cnccctttt tcccccnnntt tttttgnccg 480  
 gncccnctct cnntccctnc ctcccnccnnn ccntcgtctn nnncctngt gggcctcncc 540  
 ccttntcct tccttccnccn tttnttcccg tgccctnct ctctgnntcc ncncngtngc 600  
 gtccgggtan cccagcctcg ctctccnccg ctgnngcnct ctcnnttctt gtttntctt 660  
 ccctgtggcc ctntgcgatc ncncnanctt ctccctcgctn nggtcncanc cttnngtntc 720  
 cgcnnngngnc gncnnccnccn tctngcnccn nnntcgtctt cgtnnnncnng tnctnnnnncn 780  
 ncagtcnnngt gtgnnnagnt tnnccgnagtn tgnnatccc 819

<210> 4  
 <211> 832  
 <212> DNA  
 <213> Psuedomonas fluorescens

<220>  
 <221> variation  
 <222> (1)...(832)  
 <223> n is a, t, c, or g.

<400> 4  
 gatggtatcg gtnactcggt caccgctggg gtgggtgctcg gaacagggttc tgcgaaggttcc 60  
 cggccagtgcc ctatcgatg ctgacttcaa ctttgcggcgc gtctttgttag acgtcgcttt 120  
 ttgggtgcgtc gacagtacacg gtgcgggtcg tggcggccgc agcgatgttgc atcaccgcgc 180  
 cgttgctcag ggtcacagtg acaggcgacg cccgcggcggtt ggtcaagggtt gcgggtgtaaa 240  
 cgatcgaacc gccttccgca acgctatcggt ttgcactcaa agtcaggccg gttagtgcct 300  
 gaatgtctgt nanngtgggtc tcnngccgggg tggcgtccan gtccaaatatt tcataattnc 360

naccntgggg tcctccannt tnannctcaa gttatcgccc ccccccaaag gctccttng	420
cgtacnaaaa ttcaccgann ccganctggc nccnaaccgg aanggtgang gtcgtggccg	480
ttcnaacang gtttnataac caaacgaaac ntcgggtcac cggttctnta taacngaagg	540
nggtgttna accncgggncc cncttccgg ccaangngng aaattnncng gtgggnggaa	600
aanaggtcna ngtttnaan gggtttccng tnanctcnt nnncccnan ggnnttnnn	660
ntnanaaacc aaanntcncc ngaatttncc nccnggtngg nttnnncng nannnnnggaa	720
nttnnnngggt gggnnnnccn ntccttgtt tnnaaaaatna nnctttnng ggncnnnnnc	780
naaaagggnnc annngnggnc cnnttgggnn ggnncnnnn gggncnaag nt	832

<210> 5  
 <211> 1054  
 <212> DNA  
 <213> *Psuedomonas fluorescens*

<220>  
 <221> variation  
 <222> (1)...(1054)  
 <223> n is a, t, c, or g.

<400> 5

cncaanggcn cagagcacag gatatgcngc aatctcatgg acaaacggcg ccagccnat	60
ggaggccacc gacnccacat ccgtcgccgccc ggtcgcttgc aggcncgcca acgcancctc	120
aaggttctgc gcanttgca ncncnctc gencaccanc cnagttgcc agncncncaa	180
actccccacc ncnaannncnc ntacnaaat nntgggttgc cgnataccgc cnccactcac	240
gcaccaatttgc ctcacccncg gcctgaacna actggtcggt ncncncccg cccatccnc	300
tggttnaaac ngccnatttc cttnacccccc agcaacancn aataaccggg acctggccan	360
cnccgggtng ctcaccccggtt cattaaacttgc cattttcaaa atatnncggg ttggccacgc	420
ccgtnaggtt gtcctgntag gatccnaccc ccannttcnc tntgcccctn ggnctgntcn	480
nggaanngnn ccntgagctt tctcgaccat ctgggtttct tnctcnctn cccactcnccg	540
nnncaagttt taaggtnttn nctccgggnna atcctctnng gcannnnctt naactgnaaa	600
cttccnccga acngggncct aanantagnc ctatnngggg nnacnngcgt tgnccaaaccn	660
aactntttt ttttcccagc cgcggggctn ttcaagtctnt tgaacgnaac tcctcnngt	720
nttccacang gnctcccccc tantntntaa ccgcgtntcn tctatnttgg gngtccccgn	780
ntncatacat gnengagttt aagaagctn ancctccna nnnggnctc cgccccccaa	840
tttntccctt ctctccctt nancntctaa atatattttt tnntgggnnt naanaagggg	900
ggcgcanaaaa nacctntctc cgggggggggt tggggncct nnanaaaccn ccctttctnt	960
tntnnnncccc cctccgnggg ggctccnccc tccctnttttgc tttcccncc ctannaatcc	1020
ctactcnccng gnctagttga aaaaacanna acgc	1054

<210> 6  
 <211> 880  
 <212> DNA  
 <213> *Psuedomonas fluorescens*

<220>  
 <221> variation  
 <222> (1)...(880)  
 <223> n is a, t, c, or g.

<400> 6

ncnnacgnnt ngnaagtgtat caggccnatt aaacnnntga cnnaannaga acangnnggt	60
ctgttactac tcttcaagac caacccaagn cgaccgtgna tagcgnngncc tntacgcagc	120
atcngttccn cattagatt nntatccatc cntaagtttcc nccgggtcag aacgntnctt	180
gacgtacaac ccatanngcg gggtaannggg nnatttttng ctacctcnca tggggattttt acnactcnac	240
gnccnancncc cnnttaatng gnacgnccnnc ncangcnccn gggattttt acnactcnac	300

ccntgganaa cnttgcact acngcnggnc ccccgcnng tccnggnctc ccctgcccac	360
ttccctgtc tcccgncctc tntnccctt ttcncgtc ncttctgggtg tncgnntcc	420
ctccccccng tcctcnttca ncnnctngcg tctngggcac ctngncnnnc tcttccctnc	480
tggccctct nnccccctt cgttntancc cctctctcna ctncttcat cccgtccctn	540
ttcttntctt cencncccn ccctntctta ntccntctgt cccnctnctn tcntcgctn	600
cctncnccnc ttntcgactt cncnctgtg ncccncgcg ngngncttct ctngtcttct	660
cccgtcngcn gtcagnncc cnccttccn ttntctnctn ctgtccgnen gcnncctgt	720
ncctncncc cctagnnngg ncgcgcctn gcnncctgt cccnngntnt nntcttctg	780
cnccgtgctc nntnttcntn tntcnctcg cccatccnct ncctctnntn nncgtngntt	840
ccncttctag gnccnnattc cnannncnng ccnttncccc	880

&lt;210&gt; 7

&lt;211&gt; 779

&lt;212&gt; DNA

&lt;213&gt; Psuedomonas fluorescens

&lt;220&gt;

&lt;221&gt; variation

&lt;222&gt; (1)...(779)

&lt;223&gt; n is a, t, c, or g.

&lt;400&gt; 7

ncaanncaga tcctgnaaaa cgggaaaggt tccnttcagg tacgctactt gtgtataaaa	60
gtcaggggccc aaacgccccca ggtcaacaa ctggtcnaag gctacntggc gggttacaac	120
cgtgcgtctgg tcnaacgaa ggcggaaaggc ctgcccnaac aatgtgccag cnaatgggt	180
cggccgatca cggcgctgga cctggtcaag ttgaccgcg ggctgttgg ggaagggggc	240
gtcggccagt tcgcccangc cctggccggc ggcggaaaggc cccaggcnac cgcactcg	300
ggcaccggcgg tcaccgggtt cgcggccggc gcaacccggc agcagcnntt tgccctgaaa	360
cgcggcaaca atgcnttggg ccatcgccan cnaacgctcg ttcaatggc cgtnngaat	420
ntttgcttgg caaaccccccc atttttcccg ttgggttagg cggcattcct tttctnacca	480
naaagcacct gaaccattcc cggcaanct tggaaattct tgggccccng ngctgccaa	540
ttttgcnaa aaatcaanat cggttcaac canccnctt gcctggaaacc aaaccgtcaa	600
aaactccaaa aaaattcccc cttnccnctt gcaatcnntc naagaaccaa ccctttttt	660
ccaagggnatt tttttccna naaacncaa angtnnttnt naattttacn acttaaggcc	720
anttnnaaag tncccaattt tttanngtcc aatttgnccc nattttaaag gctccgggtt	779

&lt;210&gt; 8

&lt;211&gt; 848

&lt;212&gt; DNA

&lt;213&gt; Psuedomonas fluorescens

&lt;220&gt;

&lt;221&gt; variation

&lt;222&gt; (1)...(848)

&lt;223&gt; n is a, t, c, or g.

&lt;400&gt; 8

gccnnnnncnc nattatncaa gntctaagt ttnnaccana tnccaaaggac ataatgactt	60
ncctttatta antgtccgga ccatncata tncaaccgtg canaccgtta acttnaccca	120
ncatgnctcc gcntgtcgta tttatanncc ccataagctt cncccgtag aacgtncaa	180
taggtacant natactgcnc ggcncatggc atttggctt tctttatgtt nggnagttcn	240
aacagcctt ttagggagcg tccacagcta tagggggaaa ntntattca acnctggcna	300
aantttgaaa aactnaganc ttcnnnggtt tataggggtt tccctgacc aaannccnct	360
aattccnacn ctttgnctcc acttcctccc tngcgcgnct ttaccnngng ccccgccct	420
tccccncnngn ncntnggnca cngggggaaa ngnnntcncc cctgtgtttt ctccccngt	480

tngnnnnncc tcgtgnntcc cggnnccttn ccccccnngtt cggaactntt ctcccctncn	540
cccnccgng tgcgtctnnn tnncccnngn tncncnggnt tncncngccn ccnttcctc	600
cccccccccc ttanccngga nccctctccc tncgcntggc cngcccccn ggnccctccc	660
ctntncctc ggnncncnc gncgcnctcc tnnncnttcg cctcctccnn ccntcnnc	720
cnctcntrcc nntcccnnc ctcntnnntc ccccntgccc nnnncncnccg ccnttcgntc	780
ctcnnnnnnn tncctgngcc cgctgcncc gtngcgnccc gctntcctgc ctgtcncccc	840
ccctnccc	848

<210> 9  
 <211> 533  
 <212> DNA  
 <213> *Psuedomonas fluorescens*

<220>  
 <221> variation  
 <222> (1)...(533)  
 <223> n is a, t, c, or g.

<400> 9

tattttgtta taagntcagc gccagcagtg accgatgtca ccgataccat cgacaccagc	60
accgtttcgc tcacagcgcac ttgcacgggt gccgaagggt ggactgtcgt ttacaccgccc	120
tcgggttaacg caccctgtacg cgacgtccg ttggttatca ccctgttcca aacggccana	180
ccatcnccat tccgggttggn gccagcancn gcaccgtgaa cttcgtgaca ccaaacgacg	240
ccctcgcggg cggcgataac ctgagcgtga agattgtga cgccaagggt ggcaattacn	300
aaaaactgga catcgacgc accccggcgg acaccaccgt taccgatntg caggacacta	360
ccggcctgac ctgtgantgca accgatagcg ttgctgaang cggnctgatc gtttacaccg	420
caacatgtac caacgcccnc ggntcgctg tcnctgttac cctgaacaac nngcgggtga	480
tcaacatccc tgcgggngtt tcccccccg tnctantcta cacgngngaa aaa	533

<210> 10  
 <211> 591  
 <212> DNA  
 <213> *Psuedomonas fluorescens*

<220>  
 <221> variation  
 <222> (1)...(591)  
 <223> n is a, t, c, or g.

<400> 10

tgattttgtta taagatcagc cagcaaggcg ccgtcgctgg gttggtaaag ccccaccagc	60
aacttggcca ggaactctt gcccggccg ctgcggccaa tgatgcnat ttctcgccc	120
ggcttganca ccaggttnat attctacacc tngggnttct gctgggtcgg anaaatnaaa	180
nttcaactna nngnattcca acggccctt ccagaacttt cnggtcangg gngctcnnc	240
caaattgcgc tcttggggca gtccttcat ctgggtcgana ganatctgg tcacccccc	300
ctgttggat cgggtcntca ngccnacaa cnaaaccaac nggctgaggg cgcgaccgct	360
gaacatntnt cangcgacca ncccaccnt gtcangcna ccggcgatna tcaagtnaac	420
nccnaaaaana anatgaccac cccngccagt tnctggatca acaaagtgtat gttctttgcc	480
ngggcggana acatcttac ccccantct aagcggctga aggtgccat agtctgttcc	540
cnctggatt ggctnccnc cccccntact antcaacncn tggnaaaaaa a	591

<210> 11  
 <211> 1249  
 <212> DNA  
 <213> *Psuedomonas fluorescens*

<220>  
 <221> variation  
 <222> (1)...(1249)  
 <223> n is a, t, c, or g.

&lt;400&gt; 11

ctgggtgtat aagatcaggg ccantngtgt cctggagtgt ctgtacagt ggtttcggca	60
ngcttgcct cnanatncan ttttcgtaa ttgccaccct atggcctnct ccnaatttga	120
ancacnagnn acctnccan tgncaagggc ttcttcngcn tcnngaaatt canccnacnn	180
naaatnnggc caaccctgan tggttaccgt cntgcccgc ccnctcnggn catttctctg	240
ccnaagcnc ccggtnccn gnttgccttc taacccaagc gncngntntn nancnnccctt	300
gtttnccccc tnengnccna cgggtggaan ggtttnccc ccntagggc ctcnntntt	360
tctaaancgc tttccagaa aaaggcctgc ccggtnacn ccttcttann tntcgtcgcg	420
tccnagngct tatenctctc tnncccttc ggatactnct ctgtaaatccctt	480
nnctggntng gnttctnnnc anaaagaana tctntggggg ctttntntnt tatatcctct	540
cntattgtnc ttnncnntan cntctnccn ngannctcat tcccganacc ctctnnnnnc	600
cgccttncnc ttcntatan tttctnagtt gaaccgctcn tcccnctnca ctnttattnn	660
ntnngcgggn cgcncttt gtcctcnn aaccctgggg ntngcagcn tacnggctcn	720
ctccctaattn ctctggcgg tnnngggcg nacgtcctcg cttcgttccn naatnnntc	780
ntaanttcca acntcgngcn gccccgtcc ggnnnnnnca atnttntctc ccccctattc	840
tngctacnca gcgngtgnat atcccnntctc canagcctn ttcnnggtat aacngngnag	900
ngannctctc tcttttagtnc cnnaanccna tctctnctcc tcttcttng gtcgcgtcnc	960
tanancnctg gtcagttnnn tcctcnatgn nncnnnaggnt cccnntntct cnctcncttc	1020
ttgnnnactc ccngtntgtc cnggantggc ttctccgcct ccgnancnnt gtcctntnt	1080
tcncnannng aanantctcc ttnctaacaac nccttcgcccna aanaacntttt nactctnccc	1140
tcntccctcn ctnctcgtc tnattntnan ttncntnctt anncngtgac tgcgttagcnc	1200
tccgntctt ccnancnttc gccccntct ccnctcnna nnctatccc	1249

&lt;210&gt; 12

&lt;211&gt; 373

&lt;212&gt; DNA

&lt;213&gt; Psuedomonas fluorescens

&lt;220&gt;

&lt;221&gt; variation

&lt;222&gt; (1)...(373)

&lt;223&gt; n is a, t, c, or g.

&lt;400&gt; 12

tnattgtgtta taagntcagg actagagntc ctctcttagt nacggttcgc agcgaaaa	60
accgcacatcgccatcgtn ccccccacccg tactagtcga cacgtggana aactcgcccc	120
gagtcgacnc gtgggtanta gtcgaagcgt ggnganggnt cncgntatna ggcttaanan	180
ctgcacatcactaa aacgcggggg gaagggtctc naaaanttcn ccnatgaggg agaacacggaa	240
aanccctta ccncaggggc ggcccnagaaa tctggcaacn gancggnnng agaatacncc	300
atttcgtcacttc cttccatgggc accaccggga acatcatggg cgtcnnntnc cngtactant	360
cgaccgtggc caa	373

&lt;210&gt; 13

&lt;211&gt; 683

&lt;212&gt; DNA

&lt;213&gt; Psuedomonas fluorescens

&lt;220&gt;

&lt;221&gt; variation

&lt;222&gt; (1)...(683)

<223> n is a, t, c, or g.

<400> 13

tgactgtgt	ttataagntc	agncgacnt	ggnagtcnc	ntntgggtgg	tangatccgc	60
ancnattaag	ctggccnngg	gaaantcngg	ttcaacccgn	tgcnngncat	ganncnntat	120
ttcaactcncc	cggcgtnac	ncctnnngtan	tantcgaccc	ntggncanta	ntantctaca	180
nnntggtcaaa	acnnttcgan	nnnngtaggng	ncgcctntn	tanangtnan	cttcgttnacg	240
ggggaggaaaa	angctccccg	gnggccannn	gccgagccata	aaaaangagg	cangtanggg	300
tgngaaaaaa	naatanctng	atangacnc	accnnnttg	acgccaatta	accgangtac	360
angaccnngn	cnaactcatt	ttnagtgtnc	gcgacagaaaa	tttnanggn	cgnccangn	420
gaanggntct	cnanggtttn	gnaaannnaa	acnaggccct	ccnntaaatg	gtggacccgc	480
ggnnaanntt	nnccncgant	ggggtttga	aattactttt	caacaatctt	caaaacntcc	540
gggtcnanc	aggaggggnc	aaaaaaaaaa	tntttccgn	gtngccnnaa	aaatatccna	600
aatttntcn	cccccccccc	nccnnaaaag	aagggnnggg	gggaaggggga	aaaagggggg	660
aangaggggg	gggaagggggg	ggg				683

<210> 14

<211> 672

<212> DNA

<213> Psuedomonas fluorescens

<220>

<221> variation

<222> (1)...(672)

<223> n is a, t, c, or g.

<400> 14

gtgcttgt	ataagntcag	ncctggcct	gngcgnac	aactccggtn	nccgtctaca	60
ntttagcnaa	ggatcggtca	ttgcctngtc	tnctggntan	actnccggga	cnatccacct	120
caatactccn	ncattnacg	tctatggtaa	ccnngaggtc	ggtcancagn	ncnattaccg	180
gtntctaccng	tggaaacttc	aaaaatctng	tggcnaacac	gggacctgcg	gtccccncca	240
nttccgattc	ngngananacn	ncatggntgt	cnccnaacngg	nngcnaacncc	attcctgnan	300
gggngccaan	ttcccttcnc	ntcaancctg	nggnaacggg	cccnaatncc	gtnaacgtta	360
ccnnnganaa	atggtcngtt	ttccattccc	ccgggggnan	aaaccgggac	ngaagatttc	420
aanaccgcg	cntntnattn	tacccnngggg	nnngcgggtc	gncccccncn	nnacnngtga	480
naangggggg	ctnttcaaan	ttcnntngtgt	tnancacnac	cctggggttt	natantantt	540
ncanaattnc	gggnggaana	ccaccggggc	ttnannnctt	nnaacnggnc	nnncnaccnn	600
cttccnnnn	ngggggggng	ttccnnncnc	cccccnntnn	nttnntttnn	aaanntttt	660
ggggggaaaaaa	aa					672

<210> 15

<211> 1676

<212> DNA

<213> Psuedomonas fluorescens

<220>

<221> variation

<222> (1)...(1676)

<223> n is a, t, c, or g.

<400> 15

tgcttgtgt	taagatcagg	gcccgnegcc	ncnnnntta	ngtctgggtc	aacgacacnn	60
catnggtcn	gtggnanctc	antttacnag	gcnctaaaaa	ngcatnattg	ttatncagtn	120
ngncgaggt	gntcctcccn	tanccgaagn	natntgnna	cttggaaanga	tttnancntt	180
ttcccantcg	tngtaccag	nngtgantcn	tcantttctg	acaccnctg	gtnnccnntcc	240

tgttcacncc tanannngac cnctctcc gntgngggcc tggngcntaa tatnnttaccg	300
gcttnnnant gctgtcagta tnanntctgn nagcngnaaa ntcnctctnc annccgggtgn	360
tntngtctcn cncttctcct ntcntacac tcactnactn tntnctgnna atcnntctnn	420
ctgtantatac acggncancn cggtctntgt ggggctcnct tganagctc cccctnacct	480
ctctannac ngtgtcgggt atnnncnctat aanagtcttg tgcattntc acagtnacat	540
cgtcgccnnn cncgngtagc tctgcacnt cgcctttttn tttctttct ctctngcaaa	600
atcttnntnt ctctcnntcn atcattattc ncangcgnng ggggtctccnt cccctcnnn	660
ncntcngttc nanacangtc ntnttagt atgtcttatg tncnccntc anttttnctn	720
cncttcnac ncttcagann ggctnnngnct gacctctata gtcgntcnc tcctccctct	780
nctnntctct cngcnataac gcnctncnc ttctggncnct tcnnngctc tnntnntata	840
tccnnncgcn nttctctcta tctctccgnt ntgtgtcnct caattgtncn ctctctcgtn	900
cnnctgtcnn ntctancgtn ttcttgactt nannaatacn tacctctt ngcctctctn	960
cntntnctct cnccgcacnct ctnngaccgc tncctctgn cngegcenatc tcttctttnc	1020
gttctccnnt tctcgcnct ctctnnngtac tngctttcc cnctaccnt ctcttgcctc	1080
ttcctcgcnnt cnctcnctc tctcttctct ntctangtcn ncncgnccat nggctttctc	1140
tcgctncntr tncnctctct ntctntncg ttcgtctng atcnntctct catatntnc	1200
tntntntca tcangctn tgnactctc cnatctgtnt ctctntctta ntnntccntr	1260
cttcctnttc tcttanctcn cgtnnatnn nttctctgtat ntctcnagt atntctatgt	1320
acgctnnnnt tnatcgngnn cctntctcta tcancatcat ntagctnn ttcctatngt	1380
cctgctctca ctnttctgc cnanatattn atcnctnctc tntatctcn tanattnntn	1440
cctntnaatg tttnanaatg ctctactcna nctctctn tcttnnnctc cagntcactc	1500
tctananntg cctnnncgta tacgntctn tncgctttan tgcgtntnct atcannnncg	1560
ctctttntt ctctctcn cngtncnctt nacactntc ttcatctt ctccnnatn	1620
natgtcnntc tatnnccnct tctatgctnt cncctntcna nccacantnt nntctc	1676

<210> 16

<211> 721

<212> DNA

<213> Psuedomonas fluorescens

<220>

<221> variation

<222> (1)...(721)

<223> n is a, t, c, or g.

<400> 16

tncttgta taagatcagg cctatngccg nctgnggntt ntctgggtgc ncgacgcgcc	60
attcgaaaaa ancagctccg nnaccngttc caantacacn nngttgtcn nccgnagttc	120
cagcttengc ctcgccnacg tnnacaattc ctncnaaacc ctgggtgtgn tnttccnnna	180
gctnatgtan ganngtcnat ngnctgnnn gnactgtcn accnagnncn angtrnggac	240
caacngagc ntcattcnng cncacnncga accccgngng natcgcttct ntccnaacnc	300
cnncaantcc aacnccatng gttgtgtgn cnacgacnng ngcggaaacn ncgcncacnn	360
ngnccnagtc aagttcccgc atacccacag cnggtcnnggg ggtntcnccc cctntctntgt	420
tccaaacatn nccatanaan nnnnggtntg ctgggggaat ccaancntc nnctgngggtt	480
cgatcnaaac aanaatanggg tcaanggn cnccacttgcn tnatnaattt cnncagtgcc	540
cntnnctnncc tgnatnngcna agccnnccnnn gggttggnggg gggnnnttnc cccnnntatna	600
antanaaaacg gcnngntccnt tnnccnccan gggtgnntgn ngnttnnaa aacnnctttt	660
nnnnnaaan ccccccncct nttnccnng gannannatc cnnaaannnn gttccnnccc	720
c	721

<210> 17

<211> 452

<212> DNA

<213> Psuedomonas fluorescens

<220>  
 <221> variation  
 <222> (1)...(452)  
 <223> n is a, t, c, or g.

<400> 17

atnnnnnnnn tncttgta taagntcagg gcncnccn	tcnnaacttn gtctgggtcg	60
ngctacacnn cannggnac tggcagctcg gtnaccgcta	cctnanaacg cttcantgtt	120
cctcagcngg tccacgtcca gccttgagcc acatgtaaa	annncngccna caanccnnng	180
ngtnaanntc cacgnnntgc ncgacgantg ccaatnnaan	nttctcnacn gttcacctg	240
gaangacctt gccganaccn anacnntcac caanggtgaa	nncaactccc ggnagatncg	300
ctncacnccn gaccccaacg aatcctncgc cgnggtttt	nttagcanca tcgncgncan	360
caaccangnc canttcncc cgnnttcatt ccnnccnanc	gacggnnnnt ctggcgtn	420
cccccccggt actantctac ncnnnncaaa aa		452

<210> 18

<211> 442

<212> DNA

<213> *Psuedomonas fluorescens*

<220>

<221> variation

<222> (1)...(422)

<223> n is a, t, c, or g.

<400> 18

tncttgta taagntcagg ntctnagatg agctcggtag	ttcangagnt tttctgcgac	60
cgcgnnnccg acgnctgnaa tcgntggcna ggttngcna	nacannnnaa agtannnncc	120
tcgaancngt cnntgacctc ctgntccaaa tngtacgng	cattggncga cgcnngcnca	180
cccnncactt cgctcgacnt cccaaaancn gcctggccn	ngcncgncng gattnngccc	240
gacatcnct nancaaantn cccnccgcn tactngncca	nccttgacca nntttgcnc	300
tcctntccctt actgggtcng ctgcgtccc ggnttgctna	ccannatggt ccnaancctg	360
ctgtcctnca ctctcaaatac cggcccgcc caaccntgct	gatcgncncc nncnccnag	420
tnctattcaa cccctgccc aa		442

<210> 19

<211> 538

<212> DNA

<213> *Psuedomonas fluorescens*

<220>

<221> variation

<222> (1)...(538)

<223> n is a, t, c, or g.

<400> 19

tttgggtgta taagnatcag acactagagc ttgccccttc	tncancnctt cnatggacag	60
cggctttcgg gccgtcgagc aacgatctgt ccacagtnna	ncaccannag gcgntccacc	120
atcaanagaa aggannncng gtncntnacc acnnacacan	gtcttgatc cnaccacggc	180
agccaagcgn tggttcaaac gttcttcagc ngtgtgtcc	atggatctgg ttggttcg	240
caanaacaag ataggcgtgt tnancnccnt ncactngac	acgtgaaaat tntngctcta	300
accncccgac angttctgtc nnncnctncc naatnnnaat	tcataacctt ncngatgcn	360
gcgggcaaat tcatnncncc cggccanttc acggncgtga	acacanttca actncnacgt	420
ttcngggcgcc naaaantctt gttgtcnccc agntttnnn	nancancnng atnttnttgg	480
ggnnccctncc nnaanttntt nnncnctncc cnannttgc	aanntngnng gatgttna	538

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<210> 20
<211> 218
<212> DNA
<213> Psuedomonas fluorescens

<220>
<221> variation
<222> (1)...(218)
<223> n is a, t, c, or g.

<400> 20
tnatttgttataagttcag gttgctngnt gnacgccatc ccggccaagg gttgccggcg 60
tcacccacat ngtactagtc nncgcgtggc cnaaacggtg angtctncta attgatgctt 120
gccaacgntt naaaaaaaaaag tatngacagg gtnttaacca tcagnttnn ccnaaangta 180
ctagtctacc cgtggccana naantnnann nntggnca 218

<210> 21
<211> 642
<212> DNA
<213> Psuedomonas fluorescens

<220>
<221> variation
<222> (1)...(642)
<223> n is a, t, c, or g.

<400> 21
tncttttgttataagntcag gccccgggtt ancgnccatc ngtntgnca ncggctcctg 60
caagctgnca gcggnanatcc ngegctncct cttntgcnt ctgaaatgca ttnccccc 120
atgagtcggc tgcgttcang gttngngtgg ttcaacatc catcanctt ntctccnctg 180
ttaccccncc ngttnnccctgc cgccctctca gaccnggatn cccgtnccanc acccccttagt 240
tctaanaacg taccangaan aangaacacc cgctcgcggg tgggcctact tcacctatcc 300
tgcccggtctg acggccgttgg atacaccaag gaaagtctac acnaaccctt tgcaaaatc 360
ctgtntatcg tgcgaaaaan gatggatata ccgaaaaat cgctatantg accccnanc 420
anggtnttg caacggaaaaa ncncncttc cctgctgttt tgtggatat ctaccgactg 480
ganacaggcc aatgcatgaa attactgaac tgaaggacca agcaaaaaac catccaanna 540
actncaccaa cnanctggcc gagtnngtta naatccccgc gccggccaaa aaacgcccngc 600
attaannaan gcnggttgg tctnttnctc gnnnaaanaaa aa 642

<210> 22
<211> 583
<212> DNA
<213> Psuedomonas fluorescens

<220>
<221> variation
<222> (1)...(583)
<223> n is a, t, c, or g.

<400> 22
tatttgttat aagatcagnc cagcngtggt cttacagntg ggacaggcgg cgtcgcaagc 60
ttccccctcga gtgntgncc agnnatancg agncntgnnt gttataaaca aancacggnn 120
atcgatataac nccggttcgtg acgnctatc gccanatctn naatnccna aacgggtng 180
aatccgtaat ccaagtgtta tcntgcncgg gatgttctag agcaactcca tcatctntac 240
aanctgttca gancttgtca tggcacctcc actgagacaa cggtgtntc aatagtcanc 300

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acnccccctnn cccccnggga gganatntnt cnctggnncc acncnancan cattttaac	360
gnatatttct tntttatcag cccnnttggt taccnnntgc gtcattgggt ggntgcagcg	420
acaacncccg gagaanacna ttncttggn nggctcntcn atcatcngca ccncccccca	480
aattganaag gtcgccccnc nccnngagan acnntanccc angtcggccn tcnncaangtg	540
cgtggcgtcc cccncccgtn ctantcnacc cttnccagnc caa	583

<210> 23  
 <211> 360  
 <212> DNA  
 <213> *Psuedomonas fluorescens*

<220>  
 <221> variation  
 <222> (1)...(360)  
 <223> n is a, t, c, or g.

<400> 23	
tctttaanta gnacccgacga ntcctcttan cacccttaac cagtcnacgg ctngtggcga	60
ctggatatng acactngacc aggtcggggc ntcnccccac nnntnctatt caacgcttgg	120
ccaaacacgt ggtcanatct ctcnccagtg ccctcttan cttctccga tacacttntc	180
ttcttccaat atcccccgct aatccccctt catcngtgaa nnggccccgc tccattaaaa	240
agcatngngc nnacaaaacaa ccngagatcn ttcnntnn canncctccc gntccctcaa	300
atttcgnnag gggncgggtt ggcaccnna accgcntccn ngnggnaaat ttctncntt	360

<210> 24  
 <211> 494  
 <212> DNA  
 <213> *Psuedomonas fluorescens*

<220>  
 <221> variation  
 <222> (1)...(494)  
 <223> n is a, t, c, or g.

<400> 24	
tncttgta taagntcagg cgcaggcng accgcactan ctatgtgang ngctctcngt	60
cggngnnnca ggcnatgccc gtcattgtcc atntgcngac naccctacta ctcttntgcn	120
tgancatgac tgccggccg anaagttgcg cattgtcacc taaccctggg cgccctgtatg	180
tctncnaaaa naactgcaag atgctggcc tggactacna aaccacggcc atcgtgttca	240
agcnctggg tntcgacgtg gaatggcagt tcctgccgtg gaancgctgc ctgtgtatgc	300
tggancaggg gttggcgtac cgnnccngt acnntnnac ccntgnnaa ancnatnccn	360
tgcngctta ccccnncnaa ncncntcng acntgaaatt tgtgatnttc tacnccnatg	420
cccncccca tccntttcgc ncncncnata anctgggn gnccnccccc gtnntantcn	480
accntgnna anaa	494

<210> 25  
 <211> 23  
 <212> DNA  
 <213> *Escherichia coli*

<400> 25  
 gaacgttacc atgttaggag gtc

<210> 26  
 <211> 35

<212> DNA  
<213> Artificial Sequence

<220>  
<221> variation  
<222> (1)...(35)  
<223> n is a, t, c, or g.

<223> Random sequence

<400> 26

ggccacgcgt cgactagtac nnnnnnnnnn gatat

35

<210> 27  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Random sequence

<400> 27

ggccacgcgt cgactagtac

20

<210> 28  
<211> 24  
<212> DNA  
<213> Escherichia coli

<400> 28

cgggaaaggt tccgttcagg acgc

24

<210> 29  
<211> 35  
<212> DNA  
<213> Escherichia coli

<220>  
<221> variation  
<222> (1)...(35)  
<223> n is a, t, c, or g.

<400> 29

ggccacgcgt cgactagtac nnnnnnnnnn acgcc

35

<210> 30  
<211> 17  
<212> DNA  
<213> Escherichia coli

<400> 30

caggctctcc cgtggag

17

<210> 31

<211> 17

&lt;212&gt; DNA

&lt;213&gt; Escherichia coli

&lt;400&gt; 31

ctgcctccca gagcctg

17

&lt;210&gt; 32

&lt;211&gt; 23

&lt;212&gt; DNA

&lt;213&gt; Escherichia coli

&lt;400&gt; 32

gcttccttta gcagcccttg cgc

23

&lt;210&gt; 33

&lt;211&gt; 24

&lt;212&gt; DNA

&lt;213&gt; Escherichia coli

&lt;400&gt; 33

cttccatgtg acctcctaac atgg

24

&lt;210&gt; 34

&lt;211&gt; 595

&lt;212&gt; PRT

&lt;213&gt; Escherichia coli

&lt;400&gt; 34

Met	Ala	Gln	Val	Ile	Asn	Thr	Asn	Ser	Leu	Ser	Leu	Ile	Thr	Gln	Asn
1															
														15	
Asn	Ile	Asn	Lys	Asn	Gln	Ser	Ala	Leu	Ser	Ser	Ser	Ile	Glu	Arg	Leu
														30	
Ser	Ser	Gly	Leu	Arg	Ile	Asn	Ser	Ala	Lys	Asp	Asp	Ala	Ala	Gly	Gln
														45	
35															
Ala	Ile	Ala	Asn	Arg	Phe	Thr	Ser	Asn	Ile	Lys	Gly	Leu	Thr	Gln	Ala
														50	
50															
Ala	Arg	Asn	Ala	Asn	Asp	Gly	Ile	Ser	Val	Ala	Gln	Thr	Thr	Glu	Gly
														65	
65															
Ala	Leu	Ser	Glu	Ile	Asn	Asn	Leu	Gln	Arg	Ile	Arg	Glu	Leu	Thr	
														85	
85															
Val	Gln	Ala	Ser	Thr	Gly	Thr	Asn	Ser	Asp	Ser	Asp	Leu	Asp	Ser	Ile
														100	
100															
Gln	Asp	Glu	Ile	Lys	Ser	Arg	Leu	Asp	Glu	Ile	Asp	Arg	Val	Ser	Gly
														115	
115															
Gln	Thr	Gln	Phe	Asn	Gly	Val	Asn	Val	Leu	Ala	Lys	Asp	Gly	Ser	Met
														130	
130															
Lys	Ile	Gln	Val	Gly	Ala	Asn	Asp	Gly	Gln	Thr	Ile	Thr	Ile	Asp	Leu
														145	
145															
Lys	Lys	Ile	Asp	Ser	Asp	Thr	Leu	Gly	Leu	Asn	Gly	Phe	Asn	Val	Asn
														165	
165															
Gly	Ser	Gly	Thr	Ile	Ala	Asn	Lys	Ala	Ala	Thr	Ile	Ser	Asp	Leu	Thr
														180	
180															
Ala	Ala	Lys	Met	Asp	Ala	Ala	Thr	Asn	Thr	Ile	Thr	Thr	Asn	Asn	
														195	
195															
Ala	Leu	Thr	Ala	Ser	Lys	Ala	Leu	Asp	Gln	Leu	Lys	Asp	Gly	Asp	Thr

210	215	220
Val Thr Ile Lys Ala Asp Ala Ala Gln Thr Ala Thr Val Tyr Thr Tyr		
225	230	235
Asn Ala Ser Ala Gly Asn Phe Ser Phe Ser Asn Val Ser Asn Asn Thr		
245	250	255
Ser Ala Lys Ala Gly Asp Val Ala Ala Ser Leu Leu Pro Pro Ala Gly		
260	265	270
Gln Thr Ala Ser Gly Val Tyr Lys Ala Ala Ser Gly Glu Val Asn Phe		
275	280	285
Asp Val Asp Ala Asn Gly Lys Ile Thr Ile Gly Gly Gln Glu Ala Tyr		
290	295	300
Leu Thr Ser Asp Gly Asn Leu Thr Thr Asn Asp Ala Gly Gly Ala Thr		
305	310	315
Ala Ala Thr Leu Asp Gly Leu Phe Lys Lys Ala Gly Asp Gly Gln Ser		
325	330	335
Ile Gly Phe Asn Lys Thr Ala Ser Val Thr Met Gly Gly Thr Thr Tyr		
340	345	350
Asn Phe Lys Thr Gly Ala Asp Ala Gly Ala Ala Thr Ala Asn Ala Gly		
355	360	365
Val Ser Phe Thr Asp Thr Ala Ser Lys Glu Thr Val Leu Asn Lys Val		
370	375	380
Ala Thr Ala Lys Gln Gly Thr Ala Val Ala Ala Asn Gly Asp Thr Ser		
385	390	395
Ala Thr Ile Thr Tyr Lys Ser Gly Val Gln Thr Tyr Gln Ala Val Phe		
405	410	415
Ala Ala Gly Asp Gly Thr Ala Ser Ala Lys Tyr Ala Asp Asn Thr Asp		
420	425	430
Val Ser Asn Ala Thr Ala Thr Tyr Thr Asp Ala Asp Gly Glu Met Thr		
435	440	445
Thr Ile Gly Ser Tyr Thr Lys Tyr Ser Ile Asp Ala Asn Asn Gly		
450	455	460
Lys Val Thr Val Asp Ser Gly Thr Gly Ser Gly Lys Tyr Ala Pro Lys		
465	470	475
Val Gly Ala Glu Val Tyr Val Ser Ala Asn Gly Thr Leu Thr Thr Asp		
485	490	495
Ala Thr Ser Glu Gly Thr Val Thr Lys Asp Pro Leu Lys Ala Leu Asp		
500	505	510
Glu Ala Ile Ser Ser Ile Asp Lys Phe Arg Ser Ser Leu Gly Ala Ile		
515	520	525
Gln Asn Arg Leu Asp Ser Ala Val Thr Asn Leu Asn Asn Thr Thr Thr		
530	535	540
Asn Leu Ser Glu Ala Gln Ser Arg Ile Gln Asp Ala Asp Tyr Ala Thr		
545	550	555
Glu Val Ser Asn Met Ser Lys Ala Gln Ile Ile Gln Gln Ala Gly Asn		
565	570	575
Ser Val Leu Ala Lys Ala Asn Gln Val Pro Gln Gln Val Leu Ser Leu		
580	585	590
Leu Gln Gly		
595		

<210> 35  
 <211> 119  
 <212> PRT  
 <213> Escherichia coli

&lt;400&gt; 35

Met	Gly	Ile	Met	His	Thr	Ser	Glu	Leu	Leu	Lys	His	Ile	Tyr	Asp	Ile
1															15
Asn	Leu	Ser	Tyr	Leu	Leu	Leu	Ala	Gln	Arg	Leu	Ile	Val	Gln	Asp	Lys
															30
Ala	Ser	Ala	Met	Phe	Arg	Leu	Gly	Ile	Asn	Glu	Glu	Met	Ala	Thr	Thr
															45
Leu	Ala	Ala	Leu	Thr	Leu	Pro	Gln	Met	Val	Lys	Leu	Ala	Glu	Thr	Asn
															50
Gln	Leu	Val	Cys	His	Phe	Arg	Phe	Asp	Ser	His	Gln	Thr	Ile	Thr	Gln
															65
Leu	Thr	Gln	Asp	Ser	Arg	Val	Asp	Asp	Leu	Gln	Gln	Ile	His	Thr	Gly
															85
Ile	Met	Leu	Ser	Thr	Arg	Leu	Leu	Asn	Asp	Val	Asn	Gln	Pro	Glu	Glu
															100
Ala	Leu	Arg	Lys	Lys	Arg	Ala									115

&lt;210&gt; 36

&lt;211&gt; 295

&lt;212&gt; PRT

&lt;213&gt; Escherichia coli

&lt;400&gt; 36

Met	Leu	Ile	Leu	Leu	Gly	Tyr	Leu	Val	Val	Leu	Gly	Thr	Val	Phe	Gly
1															15
Gly	Tyr	Leu	Met	Thr	Gly	Gly	Ser	Leu	Gly	Ala	Leu	Tyr	Gln	Pro	Ala
															30
Glu	Leu	Val	Ile	Ile	Ala	Gly	Ala	Gly	Ile	Gly	Ser	Phe	Ile	Val	Gly
															35
Asn	Asn	Gly	Lys	Ala	Ile	Lys	Gly	Thr	Leu	Lys	Ala	Leu	Pro	Leu	Leu
															50
Phe	Arg	Arg	Ser	Lys	Tyr	Thr	Lys	Ala	Met	Tyr	Met	Asp	Leu	Leu	Ala
															65
Leu	Leu	Tyr	Arg	Leu	Met	Ala	Lys	Ser	Arg	Gln	Met	Gly	Met	Phe	Ser
															85
Leu	Glu	Arg	Asp	Ile	Glu	Asn	Pro	Arg	Glu	Ser	Glu	Ile	Phe	Ala	Ser
															100
Tyr	Pro	Arg	Ile	Leu	Ala	Asp	Ser	Val	Met	Leu	Asp	Phe	Ile	Val	Asp
															115
Tyr	Leu	Arg	Leu	Ile	Ile	Ser	Gly	His	Met	Asn	Thr	Phe	Glu	Ile	Glu
															130
Ala	Leu	Met	Asp	Glu	Glu	Ile	Glu	Thr	His	Glu	Ser	Glu	Ala	Glu	Val
															145
Pro	Ala	Asn	Ser	Leu	Ala	Leu	Val	Gly	Asp	Ser	Leu	Pro	Ala	Phe	Gly
															165
Ile	Val	Ala	Ala	Val	Met	Gly	Val	Val	His	Ala	Leu	Gly	Ser	Ala	Asp
															180
Arg	Pro	Ala	Ala	Glu	Leu	Gly	Ala	Leu	Ile	Ala	His	Ala	Met	Val	Gly
															195
Thr	Phe	Leu	Gly	Ile	Leu	Leu	Ala	Tyr	Gly	Phe	Ile	Ser	Pro	Leu	Ala
															210
Thr	Val	Leu	Arg	Gln	Lys	Ser	Ala	Glu	Thr	Ser	Lys	Met	Met	Gln	Cys
															225
Val	Lys	Val	Thr	Leu	Leu	Ser	Asn	Leu	Asn	Gly	Tyr	Ala	Pro	Pro	Ile
															230

245	250	255
Ala Val Glu Phe Gly Arg Lys Thr Leu Tyr Ser Ser Glu Arg Pro Ser		
260	265	270
Phe Ile Glu Leu Glu Glu His Val Arg Ala Val Lys Asn Pro Gln Gln		
275	280	285
Gln Thr Thr Thr Glu Glu Ala		
290	295	
<210> 37		
<211> 308		
<212> PRT		
<213> Escherichia coli		
<400> 37		
Met Lys Asn Gln Ala His Pro Ile Ile Val Val Lys Arg Arg Lys Ala		
1	5	10
Lys Ser His Gly Ala Ala His Gly Ser Trp Lys Ile Ala Tyr Ala Asp		
20	25	30
Phe Met Thr Ala Met Met Ala Phe Phe Leu Val Met Trp Leu Ile Ser		
35	40	45
Ile Ser Ser Pro Lys Glu Leu Ile Gln Ile Ala Glu Tyr Phe Arg Thr		
50	55	60
Pro Leu Ala Thr Ala Val Thr Gly Gly Asp Arg Ile Ser Asn Ser Glu		
65	70	75
Ser Pro Ile Pro Gly Gly Asp Asp Tyr Thr Gln Ser Gln Gly Glu		
85	90	95
Val Asn Lys Gln Pro Asn Ile Glu Glu Leu Lys Lys Arg Met Glu Gln		
100	105	110
Ser Arg Leu Arg Lys Leu Arg Gly Asp Leu Asp Gln Leu Ile Glu Ser		
115	120	125
Asp Pro Lys Leu Arg Ala Leu Arg Pro His Leu Lys Ile Asp Leu Val		
130	135	140
Gln Glu Gly Leu Arg Ile Gln Ile Ile Asp Ser Gln Asn Arg Pro Met		
145	150	155
Phe Arg Thr Gly Ser Ala Asp Val Glu Pro Tyr Met Arg Asp Ile Leu		
165	170	175
Arg Ala Ile Ala Pro Val Leu Asn Gly Ile Pro Asn Arg Ile Ser Leu		
180	185	190
Ser Gly His Thr Asp Asp Phe Pro Tyr Ala Ser Gly Glu Lys Gly Tyr		
195	200	205
Ser Asn Trp Glu Leu Ser Ala Asp Arg Ala Asn Ala Ser Arg Arg Glu		
210	215	220
Leu Met Val Gly Gly Leu Asp Ser Gly Lys Val Leu Arg Val Val Gly		
225	230	235
Met Ala Ala Thr Met Arg Leu Ser Asp Arg Gly Pro Asp Asp Ala Val		
245	250	255
Asn Arg Arg Ile Ser Leu Leu Val Leu Asn Lys Gln Ala Glu Gln Ala		
260	265	270
Ile Leu His Glu Asn Ala Glu Ser Gln Asn Glu Pro Val Ser Ala Leu		
275	280	285
Glu Lys Pro Glu Val Ala Pro Gln Val Ser Val Pro Thr Met Pro Ser		
290	295	300
Ala Glu Pro Arg		
305		

<210> 38  
<211> 245  
<212> PRT  
<213> Escherichia coli

<400> 38  
Met Arg Arg Leu Leu Ser Val Ala Pro Val Leu Leu Trp Leu Ile Thr  
1 5 10 15  
Pro Leu Ala Phe Ala Gln Leu Pro Gly Ile Thr Ser Gln Pro Leu Pro  
20 25 30  
Gly Gly Gln Ser Trp Ser Leu Pro Val Gln Thr Leu Val Phe Ile  
35 40 45  
Thr Ser Leu Thr Phe Ile Pro Ala Ile Leu Leu Met Met Thr Ser Phe  
50 55 60  
Thr Arg Ile Ile Ile Val Phe Gly Leu Leu Arg Asn Ala Leu Gly Thr  
65 70 75 80  
Pro Ser Ala Pro Pro Asn Gln Val Leu Leu Gly Leu Ala Leu Phe Leu  
85 90 95  
Thr Phe Phe Ile Met Ser Pro Val Ile Asp Lys Ile Tyr Val Asp Ala  
100 105 110  
Tyr Gln Pro Phe Ser Glu Glu Lys Ile Ser Met Gln Glu Ala Leu Glu  
115 120 125  
Lys Gly Ala Gln Pro Leu Arg Glu Phe Met Leu Arg Gln Thr Arg Glu  
130 135 140  
Ala Asp Leu Gly Leu Phe Ala Arg Leu Ala Asn Thr Gly Pro Leu Gln  
145 150 155 160  
Gly Pro Glu Ala Val Pro Met Arg Ile Leu Leu Pro Ala Tyr Val Thr  
165 170 175  
Ser Glu Leu Lys Thr Ala Phe Gln Ile Gly Phe Thr Ile Phe Ile Pro  
180 185 190  
Phe Leu Ile Ile Asp Leu Val Ile Ala Ser Val Leu Met Ala Leu Gly  
195 200 205  
Met Met Met Val Pro Pro Ala Thr Ile Ala Leu Pro Phe Lys Leu Met  
210 215 220  
Leu Phe Val Leu Val Asp Gly Trp Gln Leu Leu Val Gly Ser Leu Ala  
225 230 235 240  
Gln Ser Phe Tyr Ser  
245

<210> 39  
<211> 375  
<212> PRT  
<213> Escherichia coli

<400> 39  
Met Ile Arg Leu Ala Pro Leu Ile Thr Ala Asp Val Asp Thr Thr Thr  
1 5 10 15  
Leu Pro Gly Gly Lys Ala Ser Asp Ala Ala Gln Asp Phe Leu Ala Leu  
20 25 30  
Leu Ser Glu Ala Leu Ala Gly Glu Thr Thr Asp Lys Ala Ala Pro  
35 40 45  
Gln Leu Leu Val Ala Thr Asp Lys Pro Thr Thr Lys Gly Glu Pro Leu  
50 55 60  
Ile Ser Asp Ile Val Ser Asp Ala Gln Gln Ala Asn Leu Leu Ile Pro  
65 70 75 80

<210> 40  
<211> 547  
<212> PRT  
<213> Escherichia coli

<400> 40

Met	Ser	Ser	Leu	Ile	Asn	Asn	Ala	Met	Ser	Gly	Leu	Asn	Ala	Ala	Gln
1				5					10						15
Ala	Ala	Leu	Asn	Thr	Ala	Ser	Asn	Asn	Ile	Ser	Ser	Tyr	Asn	Val	Ala
				20					25						30
Gly	Tyr	Thr	Arg	Gln	Thr	Thr	Ile	Met	Ala	Gln	Ala	Asn	Ser	Thr	Leu
				35				40							45
Gly	Ala	Gly	Gly	Trp	Val	Gly	Asn	Gly	Val	Tyr	Val	Ser	Gly	Val	Gln
				50				55							60
Arg	Glu	Tyr	Asp	Ala	Phe	Ile	Thr	Asn	Gln	Leu	Arg	Ala	Ala	Gln	Thr
65					70					75					80



515	520	525	
Asn Ala Gln Val Leu Gln Thr Ala Asn Ala Ile Phe Asp Ala Leu Ile			
530	535	540	
Asn Ile Arg			
545			
<210> 41			
<211> 566			
<212> PRT			
<213> Psuedomonas aeruginosa			
<400> 41			
Met Asn Asp Ser Ile Gln Leu Ser Gly Leu Ser Arg Gln Leu Val Gln			
1	5	10	15
Ala Asn Leu Leu Asp Glu Lys Thr Ala Leu Gln Ala Gln Thr Gln Ala			
20	25	30	
Gln Arg Asn Lys Leu Ser Leu Val Thr His Leu Val Gln Asn Lys Leu			
35	40	45	
Val Ser Gly Leu Ala Leu Ala Glu Leu Ser Ala Glu Gln Phe Gly Ile			
50	55	60	
Ala Tyr Cys Asp Leu Asn Ser Leu Asp Arg Glu Ser Phe Pro Arg Asp			
65	70	75	80
Ala Ile Ser Glu Lys Leu Val Arg Gln His Arg Val Ile Pro Leu Trp			
85	90	95	
Arg Arg Gly Asn Lys Leu Phe Val Gly Ile Ser Asp Ala Ala Asn His			
100	105	110	
Gln Ala Ile Asn Asp Val Gln Phe Ser Thr Gly Leu Thr Thr Glu Ala			
115	120	125	
Ile Leu Val Glu Asp Asp Lys Leu Gly Leu Ala Ile Asp Lys Leu Phe			
130	135	140	
Glu Asn Ala Thr Asp Gly Leu Ala Gly Leu Asp Asp Val Asp Leu Glu			
145	150	155	160
Gly Leu Asp Val Gly Val Lys Glu Thr Ser Gly Gln Glu Asp Thr Gly			
165	170	175	
Ala Glu Ala Asp Asp Ala Pro Val Val Arg Phe Val Asn Lys Met Leu			
180	185	190	
Leu Asp Ala Ile Lys Gly Gly Ser Ser Asp Leu His Phe Glu Pro Tyr			
195	200	205	
Glu Lys Ile Tyr Arg Val Arg Phe Arg Thr Asp Gly Met Leu His Glu			
210	215	220	
Val Ala Lys Pro Pro Ile Gln Leu Ala Ser Arg Ile Ser Ala Arg Leu			
225	230	235	240
Lys Val Met Ala Gly Leu Asp Ile Ser Glu Arg Arg Lys Pro Gln Asp			
245	250	255	
Gly Arg Ile Lys Met Arg Val Ser Lys Thr Lys Ser Ile Asp Phe Arg			
260	265	270	
Val Asn Thr Leu Pro Thr Leu Trp Gly Glu Lys Ile Val Met Arg Ile			
275	280	285	
Leu Asp Ser Ser Ser Ala Gln Met Gly Ile Asp Ala Leu Gly Tyr Glu			
290	295	300	
Glu Asp Gln Lys Glu Leu Tyr Leu Ala Ala Leu Lys Gln Pro Gln Gly			
305	310	315	320
Met Ile Leu Val Thr Gly Pro Thr Gly Ser Gly Lys Thr Val Ser Leu			
325	330	335	
Tyr Thr Gly Leu Asn Ile Leu Asn Thr Thr Asp Ile Asn Ile Ser Thr			

340	345	350
Ala Glu Asp Pro Val Glu Ile Asn Leu Glu Gly Ile Asn Gln Val Asn		
355	360	365
Val Asn Pro Arg Gln Gly Met Asp Phe Ser Gln Ala Leu Arg Ala Phe		
370	375	380
Leu Arg Gln Asp Pro Asp Val Ile Met Val Gly Glu Ile Arg Asp Leu		
385	390	395
Glu Thr Ala Glu Ile Ala Ile Lys Ala Ala Gln Thr Gly His Met Val		400
405	410	415
Met Ser Thr Leu His Thr Asn Ser Ala Ala Glu Thr Leu Thr Arg Leu		
420	425	430
Leu Asn Met Gly Val Pro Ala Phe Asn Leu Ala Thr Ser Val Asn Leu		
435	440	445
Ile Ile Ala Gln Arg Leu Ala Arg Lys Leu Cys Ser His Cys Lys Lys		
450	455	460
Glu His Asp Val Pro Lys Glu Thr Leu Leu His Glu Gly Phe Pro Glu		
465	470	475
Glu Leu Ile Gly Thr Phe Lys Leu Tyr Ser Pro Val Gly Cys Asp His		480
485	490	495
Cys Lys Asn Gly Tyr Lys Gly Arg Val Gly Ile Tyr Glu Val Val Lys		
500	505	510
Asn Thr Pro Ala Leu Gln Arg Ile Ile Met Glu Glu Gly Asn Ser Ile		
515	520	525
Glu Ile Ala Glu Gln Ala Arg Lys Glu Gly Phe Asn Asp Leu Arg Thr		
530	535	540
Ser Gly Leu Leu Lys Ala Met Gln Gly Ile Thr Ser Leu Glu Glu Val		
545	550	555
Asn Arg Val Thr Lys Asp		560
565		

&lt;210&gt; 42

&lt;211&gt; 406

&lt;212&gt; PRT

<213> *Psuedomonas aeruginosa*

&lt;400&gt; 42

Met Ala Asp Lys Ala Leu Lys Thr Ser Val Phe Ile Trp Glu Gly Thr		
1	5	10
Asp Lys Lys Gly Ala Lys Val Lys Gly Glu Leu Thr Gly Gln Asn Pro		15
20	25	30
Met Leu Val Lys Ala His Leu Arg Lys Gln Gly Ile Asn Pro Leu Lys		
35	40	45
Val Arg Lys Lys Gly Ile Ser Leu Leu Gly Ala Gly Lys Lys Val Lys		
50	55	60
Pro Met Asp Ile Ala Leu Phe Thr Arg Gln Met Ala Thr Met Met Gly		
65	70	75
Ala Gly Val Pro Leu Leu Gln Ser Phe Asp Ile Ile Gly Glu Gly Phe		80
85	90	95
Asp Asn Pro Asn Met Arg Lys Leu Val Asp Glu Ile Lys Gln Glu Val		
100	105	110
Ser Ser Gly Asn Ser Leu Ala Asn Ser Leu Arg Lys Lys Pro Gln Tyr		
115	120	125
Phe Asp Glu Leu Tyr Cys Asn Leu Val Asp Ala Gly Glu Gln Ser Gly		
130	135	140
Ala Leu Glu Asn Leu Leu Asp Arg Val Ala Thr Tyr Lys Glu Lys Thr		

145	150	155	160												
Glu	Ser	Leu	Lys	Ala	Lys	Ile	Lys	Lys	Ala	Met	Thr	Tyr	Pro	Ile	Ala
165										170					175
Val	Ile	Ile	Val	Ala	Leu	Ile	Val	Ser	Ala	Ile	Leu	Leu	Ile	Lys	Val
180										185					190
Val	Pro	Gln	Phe	Gln	Ser	Val	Phe	Glu	Gly	Phe	Gly	Ala	Glu	Leu	Pro
195										200					205
Ala	Phe	Thr	Gln	Met	Ile	Val	Asn	Leu	Ser	Glu	Phe	Met	Gln	Glu	Trp
210							215					220			
Trp	Phe	Phe	Ile	Ile	Leu	Ala	Ile	Ala	Ile	Phe	Gly	Phe	Ala	Phe	Lys
225							230				235				240
Glu	Leu	His	Lys	Arg	Ser	Gln	Lys	Phe	Arg	Asp	Thr	Leu	Asp	Arg	Thr
245							250					255			
Ile	Leu	Lys	Leu	Pro	Ile	Phe	Gly	Gly	Ile	Val	Tyr	Lys	Ser	Ala	Val
260							265					270			
Ala	Arg	Tyr	Ala	Arg	Thr	Leu	Ser	Thr	Thr	Phe	Ala	Ala	Gly	Val	Pro
275							280					285			
Leu	Val	Asp	Ala	Leu	Asp	Ser	Val	Ser	Gly	Ala	Thr	Gly	Asn	Ile	Val
290							295					300			
Phe	Lys	Asn	Ala	Val	Ser	Lys	Ile	Lys	Gln	Asp	Val	Ser	Thr	Gly	Met
305							310				315				320
Gln	Leu	Asn	Phe	Ser	Met	Arg	Thr	Thr	Ser	Val	Phe	Pro	Asn	Met	Ala
325							330					335			
Ile	Gln	Met	Thr	Ala	Ile	Gly	Glu	Glu	Ser	Gly	Ser	Leu	Asp	Glu	Met
340							345					350			
Leu	Ser	Lys	Val	Ala	Ser	Tyr	Tyr	Glu	Glu	Glu	Val	Asp	Asn	Ala	Val
355							360					365			
Asp	Asn	Leu	Thr	Thr	Leu	Met	Glu	Pro	Met	Ile	Met	Ala	Val	Leu	Gly
370							375					380			
Val	Leu	Val	Gly	Gly	Leu	Ile	Val	Ala	Met	Tyr	Leu	Pro	Ile	Phe	Gln
385							390					395			400
Leu	Gly	Asn	Val	Val	Gly										
						405									

&lt;210&gt; 43

&lt;211&gt; 290

&lt;212&gt; PRT

<213> *Psuedomonas aeruginosa*

&lt;400&gt; 43

Met	Pro	Leu	Leu	Asp	Tyr	Leu	Ala	Ser	His	Pro	Leu	Ala	Phe	Val	Leu
1							5				10				15
Cys	Ala	Ile	Leu	Leu	Gly	Leu	Leu	Val	Gly	Ser	Phe	Leu	Asn	Val	Val
							20				25				30
Val	His	Arg	Leu	Pro	Lys	Met	Met	Glu	Arg	Asn	Trp	Lys	Ala	Glu	Ala
							35				40				45
Arg	Glu	Ala	Leu	Gly	Leu	Glu	Pro	Glu	Pro	Lys	Gln	Ala	Thr	Tyr	Asn
							50				55				60
Leu	Val	Leu	Pro	Asn	Ser	Ala	Cys	Pro	Arg	Cys	Gly	His	Glu	Ile	Arg
							65				70				80
Pro	Trp	Glu	Asn	Ile	Pro	Leu	Val	Ser	Tyr	Leu	Ala	Leu	Gly	Gly	Lys
							85				90				95
Cys	Ser	Ser	Cys	Lys	Ala	Ala	Ile	Gly	Lys	Arg	Tyr	Pro	Leu	Val	Glu
							100				105				110
Leu	Ala	Thr	Ala	Leu	Leu	Ser	Gly	Tyr	Val	Ala	Trp	His	Phe	Gly	Phe

115	120	125
Thr Trp Gln Ala Gly Ala Met Leu Leu Leu Thr Trp Gly Leu Leu Ala		
130	135	140
Met Ser Leu Ile Asp Ala Asp His Gln Leu Leu Pro Asp Val Leu Val		
145	150	155
Leu Pro Leu Leu Trp Leu Gly Leu Ile Ala Asn His Phe Gly Leu Phe		160
165	170	175
Ala Ser Leu Asp Asp Ala Leu Phe Gly Ala Val Phe Gly Tyr Leu Ser		
180	185	190
Leu Trp Ser Val Phe Trp Leu Phe Lys Leu Val Thr Gly Lys Glu Gly		
195	200	205
Met Gly Tyr Gly Asp Phe Lys Leu Leu Ala Met Leu Gly Ala Trp Gly		
210	215	220
Gly Trp Gln Ile Leu Pro Leu Thr Ile Leu Leu Ser Ser Leu Val Gly		
225	230	235
Ala Ile Leu Gly Val Ile Met Leu Arg Leu Arg Asn Ala Glu Ser Gly		240
245	250	255
Thr Pro Ile Pro Phe Gly Pro Tyr Leu Ala Ile Ala Gly Trp Ile Ala		
260	265	270
Leu Leu Trp Gly Asp Gln Ile Thr Arg Thr Tyr Leu Gln Phe Ala Gly		
275	280	285
Phe Lys		
290		

<210> 44  
 <211> 185  
 <212> PRT  
 <213> *Psuedomonas aeruginosa*

<400> 44			
Met Leu Leu Lys Ser Arg His Arg Ser Leu His Gln Ser Gly Phe Ser			
1	5	10	15
Met Ile Glu Val Leu Val Ala Leu Leu Leu Ile Ser Ile Gly Val Leu			
20	25	30	
Gly Met Ile Ala Met Gln Gly Lys Thr Ile Gln Tyr Thr Ala Asp Ser			
35	40	45	
Val Glu Arg Asn Lys Ala Ala Met Leu Gly Ser Asn Leu Leu Glu Ser			
50	55	60	
Met Arg Ala Ser Pro Lys Ala Leu Tyr Asp Val Lys Asp Gln Met Ala			
65	70	75	80
Thr Gln Ser Asp Phe Phe Lys Ala Lys Gly Ser Ala Phe Pro Thr Ala			
85	90	95	
Pro Ser Ser Cys Thr Pro Leu Pro Asp Ala Ile Lys Asp Arg Leu Gly			
100	105	110	
Cys Trp Ala Glu Gln Val Lys Asn Glu Leu Pro Gly Ala Gly Asp Leu			
115	120	125	
Leu Lys Ser Asp Tyr Tyr Ile Cys Arg Ser Ser Lys Pro Gly Asp Cys			
130	135	140	
Asp Gly Lys Gly Ser Met Leu Glu Ile Arg Leu Ala Trp Arg Gly Lys			
145	150	155	160
Gln Gly Ala Cys Val Asn Ala Ala Asp Ser Ser Ala Asp Thr Ser Leu			
165	170	175	
Cys Tyr Tyr Thr Leu Arg Val Glu Pro			
180	185		

<210> 45  
 <211> 274  
 <212> PRT  
 <213> Psuedomonas aeruginosa

<400> 45  
 Met Ser Met Asn Asn Arg Ser Arg Arg Gln Ser Gly Leu Ser Met Ile  
 1 5 10 15  
 Glu Leu Leu Val Ala Leu Ala Ile Ser Ser Phe Leu Ile Leu Gly Ile  
 20 25 30  
 Thr Gln Ile Tyr Leu Asp Asn Lys Arg Asn Tyr Leu Phe Gln Gln Gly  
 35 40 45  
 Gln Ala Gly Asn Gln Glu Asn Gly Arg Phe Ala Met Met Phe Leu Asp  
 50 55 60  
 Gln Gln Leu Ala Lys Val Gly Phe Arg Arg Ala Asp Asp Pro Asn  
 65 70 75 80  
 Glu Phe Ala Phe Pro Ala Gln Gln Lys Thr Ala Tyr Cys Glu Ala Phe  
 85 90 95  
 Lys Ala Gly Ser Thr Leu Val Pro Ala Val Val Lys Ala Gly Gln Ser  
 100 105 110  
 Gly Phe Cys Tyr Arg Tyr Gln Pro Ala Pro Gly Glu Ala Tyr Asp Cys  
 115 120 125  
 Glu Gly Asn Ser Ile Thr Thr Pro Ser Asp Pro Phe Ala Thr Ala Gln  
 130 135 140  
 Ala Ile Thr Ala Arg Val Leu Phe Val Pro Ala Thr Ala Asp Val Pro  
 145 150 155 160  
 Gly Ser Leu Ala Cys Ser Ala Gln Thr Ile Lys Glu Lys Gly Gln Glu  
 165 170 175  
 Ile Val Ser Gly Leu Val Asp Phe Lys Leu Glu Tyr Gly Val Gly Pro  
 180 185 190  
 Thr Met Ala Gly Lys Arg Glu Val Glu Ser Phe Val Glu Gln Ala Asn  
 195 200 205  
 Ile Ala Asp Arg Pro Val Arg Ala Leu Arg Tyr Ser Ala Leu Met Ala  
 210 215 220  
 Ser Asp Lys Asn Leu Arg Gln Gly Asp Ser Lys Thr Leu Asp Asp Trp  
 225 230 235 240  
 Ile Thr Leu Tyr Pro Ser Ser Lys Thr Ser Leu Gln Gly Asn Asp Lys  
 245 250 255  
 Asp Arg Leu Tyr Gln Ile Ala Lys Gly Ser Gln Thr Leu Arg Asn Leu  
 260 265 270  
 Val Pro

<210> 46  
 <211> 172  
 <212> PRT  
 <213> Psuedomonas aeruginosa

<400> 46  
 Met Asn Asn Phe Pro Ala Gln Gln Arg Gly Ala Thr Leu Val Ile Ala  
 1 5 10 15  
 Leu Ala Ile Leu Val Ile Val Thr Leu Leu Ala Val Ser Ser Met Arg  
 20 25 30  
 Glu Val Val Leu Glu Ser Arg Ile Thr Gly Asn Val Ile Glu Gln Thr  
 35 40 45

Arg Leu Gln Asn Ala Ala Glu Ser Gly Leu Arg Glu Gly Glu Arg Arg  
 50 55 60  
 Phe Val Asn Thr Leu Arg Pro Pro Glu Pro Gly Thr Gly Cys Thr Ala  
 65 70 75 80  
 Asp Asn Val Ala Arg Pro Cys Leu Leu Asp Leu Ala Ala Leu Asn Leu  
 85 90 95  
 Lys Leu Ala Asp Thr His Gln Asn Pro Val Gly Val Leu Lys Gly Ile  
 100 105 110  
 Ala Asn Thr Trp Met Ser Tyr Arg Gly Ser Asp Ile Ser Ser Ala Thr  
 115 120 125  
 Thr Ala Gly Asn Ala Leu Gln Arg Ala Val Glu Gln Pro Ala His Ser  
 130 135 140  
 Leu Gly Arg Pro Gly Gln Arg Ser Gly Lys Pro Arg Ile Arg Gln Pro  
 145 150 155 160  
 Asp Ala Arg His Arg His Leu Leu Arg Asp Gln  
 165 170

<210> 47  
 <211> 1161  
 <212> PRT  
 <213> Psuedomonas aeruginosa

<400> 47  
 Met Arg Gly Ile Gly Thr Phe Tyr Tyr Glu Thr Asn Ser Val Ala Arg  
 1 5 10 15  
 Asn Gln Thr Asn Ser Glu Thr Val Leu Gln Thr Val Ala Arg Pro Ser  
 20 25 30  
 Leu Tyr Gln Leu Ile Glu Pro Arg Met Lys Ser Val Leu His Gln Ile  
 35 40 45  
 Gly Lys Thr Ser Leu Ala Ala Leu Ser Gly Ala Val Leu Leu Ser  
 50 55 60  
 Ala Gln Thr Thr His Ala Ala Leu Ser Val Ser Gln Gln Pro Leu  
 65 70 75 80  
 Met Leu Ile Gln Gly Val Ala Pro Asn Met Leu Val Thr Leu Asp Asp  
 85 90 95  
 Ser Gly Ser Met Ala Phe Ala Tyr Ala Pro Asp Ser Ile Ser Gly Tyr  
 100 105 110  
 Gly Asn Tyr Thr Phe Phe Ala Ser Asn Ser Phe Asn Pro Met Tyr Phe  
 115 120 125  
 Asp Pro Asn Thr Gln Tyr Lys Leu Pro Lys Lys Leu Thr Leu Val Asn  
 130 135 140  
 Gly Gln Val Gln Ile Gln Asp Tyr Pro Ala Pro Asn Phe Ser Ser Ala  
 145 150 155 160  
 Trp Arg Asn Gly Phe Thr Arg Arg Gly Ser Ile Asn Leu Ser Asn Ser  
 165 170 175  
 Tyr Lys Val Thr Ile Glu Tyr Gly Arg Gly Tyr Asp Lys Glu Ser Thr  
 180 185 190  
 Ile Lys Ala Asp Ala Ala Tyr Tyr Asp Phe Thr Gly Ser Ser Ser  
 195 200 205  
 Trp Asn Arg Thr Asn Gln Ala Cys Tyr Thr Arg Arg Tyr Val Ser Thr  
 210 215 220  
 Glu Gln Arg Gln Asn Phe Ala Asn Trp Tyr Ser Phe Tyr Arg Thr Arg  
 225 230 235 240  
 Ala Leu Arg Thr Gln Thr Ala Ala Asn Leu Ala Phe Phe Arg Leu Pro  
 245 250 255

Glu Asn Ala Arg Val Ser Trp Gln Leu Leu Asn Asp Ser Asn Cys Asn  
 260 265 270  
 Gln Met Gly Ser Gly Ser Arg Leu Arg Gln Leu Phe Gln Gln Leu Ser  
 275 280 285  
 Thr Gly Leu His Arg Ser Thr Ala Gly Glu Leu Leu Gln Leu Ala Gly  
 290 295 300  
 Lys Thr Phe Gly Gln Trp Trp Tyr Ala Leu Arg Gln Ala Met Thr Arg  
 305 310 315 320  
 Glu Ala Ser Phe Ser Arg Arg Pro Ala Ser Asn Gly Pro Tyr Ala Tyr  
 325 330 335  
 Arg Pro Gly Thr Gln Thr Ala Pro Glu Tyr Ser Cys Arg Gly Ser Tyr  
 340 345 350  
 His Ile Leu Met Thr Asp Gly Leu Trp Asn Asn Asp Ser Ala Asn Val  
 355 360 365  
 Gly Asn Ala Asp Ser Thr Ala Arg Asn Leu Pro Asp Gly Lys Ser Tyr  
 370 375 380  
 Ser Ser Gln Thr Pro Tyr Arg Asp Gly Thr Phe Asp Thr Leu Ala Asp  
 385 390 395 400  
 Gln Ala Phe His Tyr Trp Ala Thr Asp Ala Arg Pro Asp Ile Asp Asp  
 405 410 415  
 Asn Ile Lys Pro Tyr Ile Pro Tyr Pro Asp Gln Asp Asn Pro Ser Gly  
 420 425 430  
 Glu Tyr Trp Asn Pro Arg Asn Asp Pro Ala Ile Trp Gln His Met Val  
 435 440 445  
 Thr Tyr Thr Leu Gly Leu Gly Leu Asn Thr Ser Leu Thr Ser Pro Arg  
 450 455 460  
 Trp Glu Gly Ser Thr Phe Ser Gly Gly Tyr Asn Asp Ile Val Ala Gly  
 465 470 475 480  
 Asn Leu Ser Trp Pro Arg Ala Ser Asn Asn Asp Ser Asn Asn Val Tyr  
 485 490 495  
 Asp Leu Trp His Ala Ala Val Asn Ser Arg Gly Glu Phe Phe Ser Ala  
 500 505 510  
 Asp Ser Pro Asp Gln Leu Val Ala Ala Phe Gln Asp Ile Leu Asn Arg  
 515 520 525  
 Ile Ser Gly Lys Asp Leu Pro Ala Ser Arg Pro Ala Ile Ser Ser Ser  
 530 535 540  
 Leu Gln Glu Asp Asp Thr Gly Asp Lys Leu Thr Arg Phe Ala Tyr Gln  
 545 550 555 560  
 Thr Ser Phe Ala Ser Asp Lys Asn Trp Ala Gly Asp Leu Thr Arg Tyr  
 565 570 575  
 Ser Leu Thr Thr Gln Asp Lys Ala Thr Val Gln Thr Asn Leu Trp Ser  
 580 585 590  
 Ala Gln Ser Ile Leu Asp Ala Met Pro Asn Gly Gly Ala Gly Arg Lys  
 595 600 605  
 Ile Met Met Ala Gly Ser Gly Thr Ser Gly Leu Lys Glu Phe Thr Trp  
 610 615 620  
 Gly Ser Leu Ser Ala Asp Gln Gln Arg Lys Leu Asn Arg Asp Pro Asp  
 625 630 635 640  
 Arg Asn Asp Val Ala Asp Thr Lys Gly Gln Asp Arg Val Ala Phe Leu  
 645 650 655  
 Arg Gly Asp Arg Arg Lys Glu Asn Ser Asp Asn Phe Arg Thr Arg Asn  
 660 665 670  
 Ser Ile Leu Gly Asp Ile Ile Asn Ser Ser Pro Ala Thr Val Gly Lys  
 675 680 685  
 Ala Gln Tyr Leu Thr Tyr Leu Ala Gln Pro Ile Glu Pro Ser Gly Asn

690	695	700
Tyr Ser Thr Phe Ala Glu Ala Gln Lys Thr Arg Ala Pro Arg Val Tyr		
705	710	715
Val Gly Ala Asn Asp Gly Met Leu His Gly Phe Asp Thr Asp Gly Asn		720
725		735
Glu Thr Phe Ala Phe Ile Pro Ser Ala Val Phe Glu Lys Leu His Lys		
740	745	750
Leu Thr Ala Arg Gly Tyr Gln Gly Ala His Gln Phe Tyr Val Asp		
755	760	765
Gly Ser Pro Val Val Ala Asp Ala Phe Phe Gly Gly Ala Trp His Thr		
770	775	780
Val Leu Ile Gly Ser Leu Arg Ala Gly Gly Lys Gly Leu Phe Ala Leu		
785	790	795
Asp Val Thr Asp Pro Ala Asn Ile Lys Leu Leu Trp Glu Ile Gly Val		800
805	810	815
Asp Gln Glu Pro Asp Leu Gly Tyr Ser Phe Pro Lys Pro Thr Val Ala		
820	825	830
Arg Leu His Asn Gly Lys Trp Ala Val Val Thr Gly Asn Gly Tyr Ser		
835	840	845
Ser Leu Asn Asp Lys Ala Ala Leu Leu Ile Ile Asp Leu Glu Thr Gly		
850	855	860
Ala Ile Thr Arg Lys Leu Glu Val Thr Gly Arg Thr Gly Val Pro Asn		
865	870	875
Gly Leu Ser Ser Leu Arg Leu Ala Asp Asn Asn Ser Asp Gly Val Ala		
885	890	895
Asp Tyr Ala Tyr Ala Gly Asp' Leu Gln Gly Asn Leu Trp Arg Phe Asp		
900	905	910
Leu Ile Ala Gly Lys Val Asn Gln Asp Asp Pro Phe Ser Arg Ala Asn		
915	920	925
Asp Gly Pro Thr Val Ala Ser Ser Phe Arg Val Ser Phe Gly Gly Gln		
930	935	940
Pro Leu Tyr Ser Ala Val Asp Ser Ala Gly Ala Ala Gln Ala Ile Thr		
945	950	955
Ala Ala Pro Ser Leu Val Arg His Pro Thr Arg Lys Gly Tyr Ile Val		960
965	970	975
Ile Phe Gly Thr Gly Lys Tyr Phe Glu Asn Ala Asp Ala Arg Ala Asp		
980	985	990
Thr Ser Arg Ala Gln Thr Leu Tyr Gly Ile Trp Asp Gln Gln Thr Lys		
995	1000	1005
Gly Glu Ala Ala Gly Ser Thr Pro Arg Leu Thr Arg Gly Asn Leu Gln		
1010	1015	1020
Gln Gln Thr Leu Asp Leu Gln Ala Asp Ser Thr Phe Ala Ser Thr Ala		
1025	1030	1035
Arg Thr Ile Arg Ile Gly Ser Gln Asn Pro Val Asn Trp Leu Asn Asn		104
1045	1050	1055
Asp Gly Ser Thr Lys Gln Ser Gly Trp Tyr Leu Asp Phe Met Val Asn		
1060	1065	1070
Gly Thr Leu Lys Gly Glu Met Leu Ile Glu Asp Met Ile Ala Ile Gly		
1075	1080	1085
Gln Val Val Leu Leu Gln Thr Ile Thr Pro Asn Asp Asp Pro Cys Ala		
1090	1095	1100
Asp Gly Ala Ser Asn Trp Thr Tyr Gly Leu Asp Pro Tyr Thr Gly Gly		
1105	1110	1115
Arg Thr Arg Phe Thr Val Phe Asp Leu Gly Arg Gln Gly Val Val Gly		112
1125	1130	1135

Leu Glu Ile Arg Leu Thr Gly Thr Arg Arg Asn Val Gly Asn Pro  
 1140 1145 1150  
 Val Pro Ser Arg Lys Ala Trp Glu Ala  
 1155 1160

<210> 48  
 <211> 115  
 <212> PRT  
 <213> *Psuedomonas aeruginosa*

<400> 48  
 Met Lys Val Leu Pro Met Leu Leu Ala Leu Ala Val Pro Gly Leu Cys  
 1 5 10 15  
 Trp Ala Glu Asp Pro Gln Thr Phe Glu Gly Ala Gly Val Val Phe Glu  
 20 25 30  
 Val Gln Val Glu Lys Asn Leu Val Asp Ile Asp His Arg Leu Tyr Arg  
 35 40 45  
 Leu Pro Asn Ser Thr Val Arg Asn Gly Met Pro Ser Leu Phe Gln Val  
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 Lys Pro Gly Ser Val Val Ser Tyr Ser Gly Thr Val Ser Gln Pro Trp  
 65 70 75 80  
 Ser Thr Ile Thr Asp Ile Tyr Ile His Lys Gln Met Ser Glu Gln Glu  
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 Asp Ala Ala Ala Arg Gln Glu Arg Tyr Tyr Ser Gln Asn Pro Gly Val  
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 Gly Tyr Thr Lys Asp Val Ala Lys Leu Gly Met Ser Ser Ala Asn Ser  
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 Pro Asn Asn Leu Tyr Asn Leu Thr Ile Ala Thr Pro Thr Ser Thr Thr  
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 Tyr Thr Leu Thr Ala Thr Pro Ile Asn Ser Gln Thr Arg Asp Lys Thr  
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 Cys Gly Lys Leu Thr Leu Asn Gln Leu Gly Glu Arg Gly Ala Ala Gly  
 115 120 125  
 Lys Thr Gly Asn Asn Ser Thr Val Asn Asp Cys Trp Arg  
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